

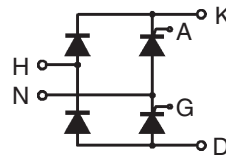
Single Phase Rectifier Bridge

$$I_{dAV} = 36 \text{ A}$$

$$V_{RRM} = 1600 \text{ V}$$

Preliminary data

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
1700	1600	VGO 36-16io7



Symbol	Test Conditions	Maximum Ratings
I_{dAV}^*	$T_H = 85^\circ\text{C}$, module	36 A
I_{dAVM}^*	module	40 A
I_{FRMS}^*, I_{TRMS}	per leg	31 A
I_{FSM}^*, I_{TSM}	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0 \text{ V}$	$t = 10 \text{ ms}$ (50 Hz), sine 320 A $t = 8.3 \text{ ms}$ (60 Hz), sine 350 A
	$T_{VJ} = T_{VJM}$ $V_R = 0 \text{ V}$	$t = 10 \text{ ms}$ (50 Hz), sine 280 A $t = 8.3 \text{ ms}$ (60 Hz), sine 310 A
I^2t	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0 \text{ V}$	$t = 10 \text{ ms}$ (50 Hz), sine 500 A ² s $t = 8.3 \text{ ms}$ (60 Hz), sine 520 A ² s
	$T_{VJ} = T_{VJM}$ $V_R = 0 \text{ V}$	$t = 10 \text{ ms}$ (50 Hz), sine 390 A ² s $t = 8.3 \text{ ms}$ (60 Hz), sine 400 A ² s
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$ $f = 50 \text{ Hz}$, $t_p = 200 \mu\text{s}$ $V_D = 2/3 V_{DRM}$ $I_G = 0.3 \text{ A}$, $di_G/dt = 0.3 \text{ A}/\mu\text{s}$	repetitive, $I_T = 50 \text{ A}$ 150 A/ μs non repetitive, $I_T = 1/2 \cdot I_{dAV}$ 500 A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $V_{DR} = 2/3 V_{DRM}$ $R_{GK} = \infty$; method 1 (linear voltage rise)	1000 V/ μs
V_{RGM}		10 V
P_{GM}	$T_{VJ} = T_{VJM}$ $I_T = I_{TAVM}$	$t_p = 30 \mu\text{s}$ $\leq 10 \text{ W}$ $t_p = 500 \mu\text{s}$ $\leq 5 \text{ W}$ $t_p = 10 \text{ ms}$ $\leq 1 \text{ W}$
P_{GAVM}		0.5 W
T_{VJ}		-40...+125 $^\circ\text{C}$
T_{VJM}		125 $^\circ\text{C}$
T_{stg}		-40...+125 $^\circ\text{C}$
V_{ISOL}	50/60 Hz, RMS $I_{ISOL} \leq 1 \text{ mA}$	$t = 1 \text{ min}$ 2500 V~ $t = 1 \text{ s}$ 3000 V~
M_d	Mounting torque (M4)	1.5 - 2 Nm 14 - 18 lb.in.
Weight	typ.	18 g

Features

- Package with DCB ceramic base plate
- Isolation voltage 3000 V~
- Planar passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering

Applications

- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

Advantages

- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling capability
- Small and light weight

Data according to IEC 60747 refer to a single diode/thyristor unless otherwise stated

* for resistive load at bridge output. IXYS reserves the right to change limits, test conditions and dimensions.

IXYS reserves the right to change limits, test conditions and dimensions.

20100705a

Symbol	Test Conditions	Characteristic Values		
I_R, I_D	$V_R = V_{RRM}; V_D = V_{DRM}$ $T_{VJ} = T_{VJM}$ $T_{VJ} = 25^{\circ}\text{C}$	$\leq$	5	mA
		$\leq$	0.3	mA
V_T, V_F	$I_T, I_F = 45\text{ A}; T_{VJ} = 25^{\circ}\text{C}$	$\leq$	1.45	V
V_{T0}	For power-loss calculations only ($T_{VJ} = 125^{\circ}\text{C}$)		0.85	V
r_T			13	mΩ
V_{GT}	$V_D = 6\text{ V};$ $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = -40^{\circ}\text{C}$	$\leq$	1.0	V
		$\leq$	1.2	V
I_{GT}	$V_D = 6\text{ V};$ $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = -40^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$	$\leq$	65	mA
		$\leq$	80	mA
		$\leq$	50	mA
V_{GD}	$T_{VJ} = T_{VJM};$ $V_D = 2/3 V_{DRM}$	$\leq$	0.2	V
I_{GD}	$T_{VJ} = T_{VJM};$ $V_D = 2/3 V_{DRM}$	$\leq$	5	mA
I_L	$I_G = 0.3\text{ A}; t_G = 30\text{ }\mu\text{s};$ $di_G/dt = 0.3\text{ A}/\mu\text{s};$ $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = -40^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$	$\leq$	150	mA
		$\leq$	200	mA
		$\leq$	100	mA
I_H	$T_{VJ} = 25^{\circ}\text{C}; V_D = 6\text{ V}; R_{GK} = \infty$	$\leq$	100	mA
t_{gd}	$T_{VJ} = 25^{\circ}\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.3\text{ A}; di_G/dt = 0.3\text{ A}/\mu\text{s}$	$\leq$	2	μs
t_q	$T_{VJ} = 125^{\circ}\text{C}, I_T = 15\text{ A}, t_p = 300\text{ }\mu\text{s}, V_R = 100\text{ V}$ $di/dt = -10\text{ A}/\mu\text{s}, dv/dt = 20\text{ V}/\mu\text{s}, V_D = 2/3 V_{DRM}$	typ.	150	μs
R_{thJC}	per thyristor (diode); DC current per module		1.4 0.35	K/W K/W
R_{thJK}	per thyristor (diode); DC current per module		2.0 0.5	K/W K/W
d_s	Creepage distance on surface		12.6	mm
d_A	Creepage distance in air		6.3	mm
a	Max. allowable acceleration		50	m/s ²

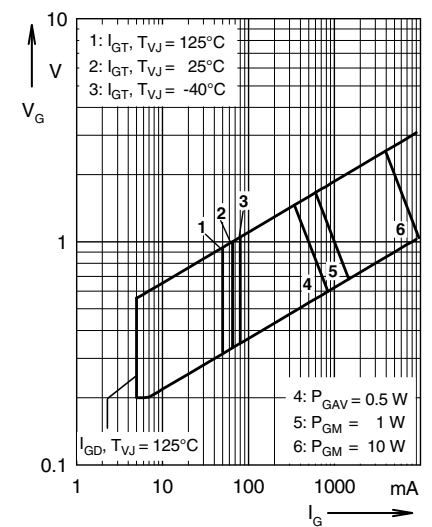


Fig. 1 Gate trigger range

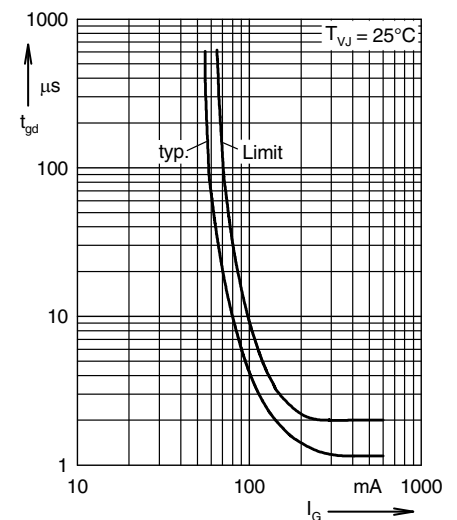


Fig. 2 Gate controlled delay time t_{gd}

Dimensions in mm (1 mm = 0.0394")

